

**ABSTRACT**

Testori Aero Supply (TAS) is a Design Organization approved by EASA (EASA.21J.350), with a consolidated experience in manufacturing of seat cushions.

In the last three years TAS has been granted by EASA several Supplemental Type Certificates relevant to the replacement of monolithic seat cushions based on the component testing methodology outlined in FAA Report FAA/DOT/AR-05/5.I.

Now TAS has decided to develop a test method to proof that component testing could be used to substantiate compliance with CS 25.562(c)(2) for non-monolithic cushions.

TAS has applied to participate to a European Commission programme for research and innovation named Horizon 2020 and has submitted the project "Development of replacement method for all kind of 16g dynamically tested aircraft seat cushions".

TAS approach to the 16g multilayer non monolithic cushions replacement project has been developed in cooperation with the Polytechnic University of Milan and with the support of GEVEN, an Italian aircraft seat manufacturer.

The project has been accepted as innovative project eligible to receive a founding by the European Commission. TAS and the European Commission have signed the grant agreement number 711347 on January 2016.

TAS has then signed with EASA (European Aviation Safety Agency) a TAC (Technical Advice Contract) to receive technical guidance during the project.

The project, for the time being, is limited to Economy Class seating type and consists in two different phases.

In the first phase the results of the compression tests on different multi-layer foam compositions, together with the results of the lumbar load measurements obtained in the 14 g Down dynamic tests run on the same cushion compositions installed on a TPL narrow seat manufactured by GEVEN, will be collected and used by the Polytechnic University of Milan to refine the calibration of a simplified dynamic model of the seat and the ATD.

In the second phase, the results of the compression tests will be used as input for the model to predict the peak of the lumbar load that would be measured in a dynamic test. The results of the simulation will then be validated through comparison with the actual lumbar load values that will be measured in 14 g Down dynamic tests.